

Stemming the Tide: Navy Medicine and the Egyptian Cholera Epidemic of 1947

U.S. Navy Bureau of Medicine and Surgery

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On September 21, 1947, a man was admitted to the Al-Qurayn (El Korein) Hospital in Egypt vomiting profusely and suffering severe diarrhea. Within hours he was dead. The attending physician on duty first suspected food poisoning before 11 additional patients were admitted with identical symptoms. Their diagnosis was cholera, a deadly bacterial disease that can result in death within hours if not treated. Over the next three months cholera spread across 2,270 towns and villages in Egypt killing over half of its victims. According to one estimate over 20,000 Egyptians died of cholera.

As this public health threat was rapidly developing into a crisis, Navy physician Cmdr. Robert Phillips was settling in as the new commanding officer of the Naval Medical Research Unit No. 3 (NAMRU-3) at the Abbassia Fever Hospital in Cairo, Egypt.

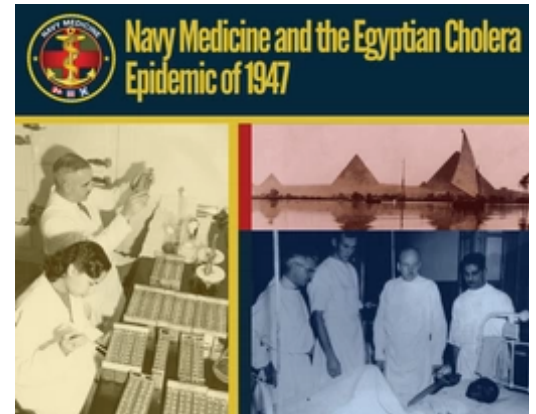
The 41-year-old Phillips was a seven-year veteran of the Navy whose career included a tour as medical researcher at the U.S. Typhus Commission field activity in World War II, then located at the Abbassia Fever Hospital. When the Commission closed in 1945, the Bureau of Medicine and Surgery (BUMED) assumed control over its spaces using it as the home for U.S. Navy Epidemiological Unit # 50 before establishing NAMRU-3 there in January 1946. The new laboratory's primary mission was to work in conjunction with the Egyptian government in "researching tropical diseases endemic in the Middle East."

Despite executing this important task—and curbing the spread of disease to the local population and U.S. service personnel in the region—NAMRU-3's status in Egypt in those first two years could be described as tenuous at best. And in 1947, the laboratory was still operating without an official agreement from its host nation. When Dr. Nagib Iskander, the Egyptian Minister of Health, visited NAMRU-3 on September 24, 1947, Phillips may have suspected a formal request to disestablish the lab. Instead, Iskander asked Phillips for assistance in fighting cholera.

Seeing a golden opportunity to prove NAMRU-3's worth, Cmdr. Phillips immediately wired BUMED with a request for anti-cholera vaccine and necessary drugs for treating the disease. Within 24 hours, BUMED tapped into its medical supply depot in Brooklyn, N.Y. (a forerunner of the Naval Medical Readiness Logistics Command) and arranged for "10,000 pounds of critically needed vaccine, plasma and other medical supplies" to be flown to Cairo. Additional supplies were provided by the U.S. Army, Great Britain, India and the Republic of China.

Medical supplies were taken to NAMRU-3 where personnel—working in tandem with Egyptian staff from the Abbassia Fever Hospital—began vaccinating the local population. NAMRU-3 also sent field teams to vaccinate schools and shared supplies with the government for distribution throughout Egypt. It is estimated that NAMRU-3 personnel inoculated some 1,000 people a day over the next month.

As NAMRU-3 was projecting medical power through "shots in arms," the more foundational work in the fight against cholera was taking place behind the scenes. At the Abbassia Fever Hospital, Phillips and his team embarked on a landmark clinical and laboratory investigation into the disease. By studying cholera patients, they were able to estimate "quantitatively the[ir] degree of hydration." This information enabled them to determine the necessary volume and composition of intravenous fluids needed by the patient. Application of this technique helped



NAMRU-3 reduce the mortality among cholera patients at the hospital to between 5 and 7.5 percent. As a comparison, the mortality rate for cholera patients not treated by NAMRU-3 during the epidemic was a staggering 50 percent.

NAMRU-3's efforts garnered great attention throughout Egypt. On October 7, 1947, *Le Phare Egyptian*, a local newspaper published an editorial calling the U.S. Navy-led effort to vaccinate the country as "one of the most spectacular examples of medical cooperation in history."

Dr. Claude Herman Barlow, an American-born scientist employed with the Egyptian Ministry of Health wrote James Forrestal—the newly appointed (and first) U.S. Secretary of Defense—calling attention to the lab's impact on the country: "To my mind NAMRU #3 is the greatest single asset which the USA has ever succeeded in presenting as a goodwill liaison between two countries. It can do more for cordial diplomatic relationships than could be done by years of other diplomatic agencies."

Postscript:

Egypt and the United States formalized an agreement recognizing NAMRU-3's status and allowing for construction of a new permanent home on 2.5 acres adjacent to the Abbassia Fever Hospital. NAMRU-3's headquarters were commissioned on "Navy Day," October 27, 1948 and formally dedicated in January 1950. Over the next 50 years NAMRU-3 became the Navy's preeminent biomedical laboratory and, for a time, was the military's largest overseas medical lab.

NAMRU-3 began relocating its headquarters from Cairo to Sigonella, Sicily, in December 2019.

In May 2023, NAMRU-3 was renamed "NAMRU-EURAFCENT" reflecting its role in supporting efforts across CENTCOM, AFRICOM and EUCOM.

For his efforts in helping to fight the cholera threat, Phillips was awarded the Egyptian Gold Cholera Medal from Dr. Nagib Iskander in 1947.

In 1955, Phillips was promoted to Captain and selected as the commanding officer of the re-activated NAMRU-2, then based in Taipei, Taiwan. It was there that Phillips developed a glucose-based oral rehydration therapy which helped reduce the cholera mortality rate to less than 1 percent. In 1967, Phillips was awarded the prestigious Lasker Prize for his work on cholera—the first U.S. military medical officer recognized with this honor. His award is on display at the Naval Medical Research Command (NMRC) in Silver Spring, Md.

Today, the work of Navy Medical R&D continues throughout the United States, South America, Africa, Europe, and across Asia. And although individual NAMRUs have been impacted by geopolitics as well as mission and name changes, the important roles that they and their teams of researchers play remains as vital as ever.

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